REMARKS

Claims 1-2 and 4-11 are pending in this application. By this Amendment, claims 1, 5 and 7-11 are amended.

I. Claim Rejections Under 35 U.S.C. §103

The Office Action rejects claims 1, 2, 4, and 10-11 under 35 U.S.C. 103(a) over U.S. Patent 6,801,220 to Greier, et al. (Greier) in view of U.S. Patent 6,392,642 to Wu and further in view of U.S. Patent 5,877,737 to Kim et al. (Kim). The Office Action rejects claims 5-6 and 8-9 under 35 U.S.C. 103(a) over Greier in view of U.S. Patent 5,905,452 to Hughes and further in view of U.S. Patent 5,402,149 to Amagami et al. (Amagami). The Office Action rejects claim 7 under 35 U.S.C. 103(a) over Greier in view of Wu.

After reviewing the application, Office Action, and applied references, we believe the prior art at least fails to disclose: (1) the display device displaying the original image data on the display unit if the original image data has a number of pixels corresponding to a number of displayed pixels, as recited in independent claims 1, 7, and 10-11; and (2) setting the grayscale value of each subpixel of one pixel to a different grayscale value than the other subpixels of the one pixel, as recited in independent claims 5 and 8-9.

Greier discloses adjusting subpixel intensity based on luminance characteristics and initial intensity values of the subpixels. This shifts subpixel intensity values from mid-tone levels, which provide non-ideal viewing angle and color characteristics, to either bright or dark intensity levels (col. 4, lines 62-66). This adjustment is done by pixel groups with average luminance preserved in local areas (col. 12, line 61 to col. 13, line 4). Additionally, in order to prevent flicker, the adjustment of grayscale values to bright or dark can be done in a pattern of bright and dark pixels or subpixels in conjunction with an inversion pattern which determines voltage polarity of the pixels or subpixels (col. 13, lines 46-55). For example, Greier discloses a pattern wherein the grayscale values of pixels are adjusted to be bright or

dark according to a checkerboard pattern (Fig. 15, showing bright pixels as white and dark pixels as cross-hatched). Greier does not disclose changing image size, thus Greier discloses adjusting the grayscale levels of pixels and subpixels when the input image is the same size as the displayed image.

Wu discloses hardware for adjusting horizontal image resolution (abstract). A displaying circuit 58 varies a pixel clock 59 which determines the sampling rate of video signals 16 (col. 3, lines 60-62), thereby adjusting the sampling rate to accommodate the horizontal resolution of the display. Wu does not appear to disclose any adjustment of the vertical resolution of images.

Kim discloses a driving circuit and method for a display having a plurality of pixels that includes first gray level voltage generator 301 and second gray level voltage generator 302 generating first and second grayscale voltages, respectively (col. 2, line 60 to col. 3, line 3). An analog distributor 303 supplies the first grayscale voltages to a first set of pixels to achieve a first viewing angle characteristic and supplies the second gray level voltages to a second set of pixels to achieve a second viewing angle characteristic, alternating the sets of pixels the grayscale voltages are applied to according to control signals A and B (col. 3, lines 3-9). The first and second sets of pixels can be in various relationships, which include a checkerboard pattern as shown in Fig. 1A (col. 4, line 65 to col. 5, line 3). Kim does not disclose setting the grayscale of the first and second sets of pixels to achieve -30 degree or +30 degree viewing angle characteristics. However, the Office Action alleges this is an optimization which was within the skill of one of ordinary skill at the time of the invention and thus obvious over Kim.

Hughes discloses, in relation to a ferroelectric liquid crystal display, that grayscale values of adjacent subpixels can be varied to change the apparent relative size of the two adjacent subpixels (col. 4, lines 31-33).

Amagami discloses expanding a display data for a low resolution matrix display apparatus to display data for a high resolution matrix display apparatus without causing a reduction in the speed of processing and without requiring clocks of different frequencies (Abstract).

Regarding independent claims 1, 7, and 10-11, as Greier discloses adjusting intensity levels where the original image size is the same as the display size, Greier at least fails to disclose that the display device displays the original image data on the display unit if the original image data has a number of pixels corresponding to a number of displayed pixels as recited. Wu and Kim do not remedy this deficiency. While the Office Action alleges Wu discloses this feature, the addition of the disclosure of Wu to the disclosure of Greier would render the invention of Greier unsuitable for the use intended, *e.g.*, improving the display characteristics of any image with a large percentage of pixels at mid-tone levels. Thus, the Office Action's allegation that the disclosure of Wu can be added to the disclosure of Greier is improper because this modification would render the image display device of Greier unsuitable for its intended purpose - MPEP §3143.01(r)

Regarding independent claims 5, 8, and 9, as Hughes only suggests adjusting the relative grayscale levels of two adjacent subpixels, Hughes at least fails to disclose setting the grayscale value of each sub pixel of one pixel to a different grayscale value than the other sub pixels of the one pixel as recited.

Further regarding independent claims 1, 5 and 7-11, Greier and Wu, even if combined, and Greier and Hughes, even if combined, fail to disclose a viewing angle range adjustment device which sets grayscale values of pixels of a resolution-converted image generated by a resolution-conversion device as recited in the claims.

For the foregoing reasons, Applicants respectfully request withdrawal of the rejections.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2 and 4-11 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

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